Claims:

1. A mammalian non-human female animal having at least a partial depletion of ovarian primordial follicles and at least one characteristic of perimenopause and/or menopause induced by administration of 4-vinylcyclohexene diepoxide at a dosage of at least 100 mg/kg/day or 4-vinylcyclohexene at a dosage of at least 1000 mg/kg/day.

2. The animal of Claim 1, which is prepared by a process comprising administering to the animal 4-vinylcyclohexene diepoxide at a dosage of at least 100 mg/kg/day.

3. The animal of Claim 1, which is prepared by a process comprising administering to the animal 4-vinylcyclohexene at a dosage of at least 1000 mg/kg/day.

4. The animal of Claim 1, which is suitable as a model of perimenopause.

5. The animal of Claim 1, which is suitable as a model of menopause.

6. The animal of Claim 1, wherein the at least a partial depletion of ovarian primordial follicles and at least one characteristic of perimenopause and/or menopause is induced by said 4-vinylcyclohexene diepoxide.

7. The animal of Claim 1, wherein the at least a partial depletion of ovarian primordial follicles and at least one characteristic of perimenopause and/or menopause is induced by said 4-vinylcyclohexene.

8. The animal of Claim 1, wherein the animal has loss of bone mineral density.

9. The animal of Claim 1, which has at least one characteristic of perimenopause.

10. The animal of Claim 1, which has at least one characteristic of menopause.

11. The animal of Claim 1, wherein said at least one characteristic of menopause is irregular ovarian cyclicity, elevated FSH levels, erratic ovarian 17β-estradiol levels, loss of bone mineral density, or reduced ovarian weight.

12. The animal of Claim 1, wherein said at least one characteristic of menopause is depletion of ovarian follicles, menstrual periods have ceased, elevated LH levels, elevated FSH levels, diminished ovarian 17β-estradiol levels, loss of bone mineral density, or reduced ovarian weight.

13. The animal of Claim 1, which is a mouse.

14. The mouse of Claim 13, which is transgenic.

15. The mouse of Claim 13, which is gene-deficient.

16. The mouse of Claim 13, which is a knock-in.

17. The animal of Claim 1, which is transgenic.

18. The animal of Claim 1, which is gene-deficient.

19. The animal of Claim 1, which is a knock-in.

20. The animal of Claim 1, which is a rat.

21. The animal of Claim 1, which is a primate.

22. The animal of Claim 1, which is a canine.

23. A method of preparing the animal of Claim 1, comprising administering to the animal 4-vinylcyclohexene diepoxide at a dosage of at least 100 mg/kg/day or 4-vinylcyclohexene at a dosage of at least 1000 mg/kg/day.

24. The method of Claim 23, wherein said 4-vinylcyclohexene diepoxide is administered to the animal.

25. The method of Claim 24, wherein the 4-vinylcyclohexene diepoxide is administered intraperitoneally (i.p.), subcutaneously (s.c.), or by an implantable device.

26. A method of Claim 23, wherein said 4-vinylcyclohexene is administered to the animal.

27. The method of Claim 26, wherein the 4-vinylcyclohexene is administered intraperitoneally (i.p.), subcutaneously (s.c.), or by an implantable device.

28. The method of Claim 23, wherein the animal is suitable as a model of perimenopause.

29. The method of Claim 23, wherein the animal is suitable as a model of menopause.

30. The method of Claim 23, wherein the animal is a mouse.

31. The method of Claim 30, wherein the mouse is transgenic.

32. The method of Claim 30, wherein the mouse is gene-deficient.

33. A method of screening an agent, comprising:

administering an agent to the animal of Claim 1; and

evaluating the effect of the agent on the animal.

34. The method of Claim 33, wherein the agent is a treatment for one or more conditions selected from the group consisting of hot flashes, osteoporosis, incontinence, poylcystic ovarian disease, Alzheimer's disease, depression, macular degeneration, arthritis, anxiety, obesity, ovarian cancer, diabetes mellitus, vaginal dryness, vaginal discharge, cancers of the reproductive tract, breast cancer, thinning of the skin, loss of libido, colorectal cancer, alopecia, hirsutism, cardiovascular disorders, loss of manual dexterity, osteopenia, cognitive impairments, and dementia.

35. The method of Claim 34, wherein said cardiovascular disorders are selected from the group consisting of heart attack, stroke, deep vein thrombosis, hypertension, hypotension, ischemia, pulmonary embolism, atherosclerosis, heart abnormality, hypercholesterolemia, hypertriglyceridemia, hypocholesterolemia, hypotriglyceridemia, vascular defects, vascular homeostasis, and sudden cardiac death.

36. The method of Claim 34, wherein the animal is a mouse.

37. A method of inducing ovarian failure in a mammalian non-human female animal other than a mouse or a rat, comprising administering to the animal an effective amount of at least one compound selected from the group consisting of 4-vinylcyclohexene diepoxide, 4-vinylcyclohexene, 4-vinylcyclohexene-1,2-epoxide, and 4-vinylcyclohexene-7,8-epoxide.

38. The method of Claim 37, wherein said compound is 4-vinylcyclohexene diepoxide.

39. The method of Claim 37, wherein said compound is 4-vinylcyclohexene.

40. The method of Claim 37, wherein the animal is a canine.

41. A method of controlling the size of a mammalian non-human animal population, comprising administering an effective amount of at least one compound selected from the group consisting of 4-vinylcyclohexene diepoxide, 4-vinylcyclohexene, 4-vinylcyclohexene-1,2-epoxide, and 4-vinylcyclohexene-7,8-epoxide to the animal population sufficient to cause

at least partial ovarian failure in at least a portion of the female members of the animal population.

42. The method of Claim 41, wherein the animal is selected from the group consisting of dogs, cats, hamsters, ferrets, rabbits, sheep, cattle, horses, pigs, deer, elk, moose, bears, goats, monkeys, and wild felines.

43. The method of Claim 41, wherein said compound is 4-vinylcyclohexene diepoxide.

44. The method of Claim 41, wherein said compound is 4-vinylcyclohexene.

45. A method of sterilizing a mammalian non-human female animal other than a mouse or a rat, comprising administering an effective amount of at least one compound selected from the group consisting of 4-vinylcyclohexene diepoxide, 4-vinylcyclohexene, 4-vinylcyclohexene-1,2-epoxide, and 4-vinylcyclohexene-7,8-epoxide to the animal.

46. The method of Claim 45, wherein the animal is selected from the group consisting of dogs, cats, hamsters, ferrets, rabbits, sheep, cattle, horses, pigs, deer, elk, moose, bears, goats, monkeys, and wild felines.

47. The method of Claim 45, wherein said compound is 4-vinylcyclohexene diepoxide.

48. The method of Claim 45, wherein said compound is 4-vinylcyclohexene.

49. A solid composition suitable for oral administration, comprising at least one compound selected from the group consisting of 4-vinylcyclohexene diepoxide, 4-vinylcyclohexene, 4-vinylcyclohexene-1,2-epoxide, and 4-vinylcyclohexene-7,8-epoxide and a solid excipient.

50. The composition of Claim 49, wherein said compound is 4-vinylcyclohexene diepoxide.

51. The composition of Claim 49, wherein said compound is 4-vinylcyclohexene.

52. A composition suitable for dermal delivery of at least one compound selected from the group consisting of 4-vinylcyclohexene diepoxide, 4-vinylcyclohexene, 4-vinylcyclohexene-1,2-epoxide, and 4-vinylcyclohexene-7,8-epoxide contained in a dermal delivery device.

53. The composition of Claim 52, wherein said compound is 4-vinylcyclohexene diepoxide.

54. The composition of Claim 52, wherein said compound is 4-vinylcyclohexene.

55. A composition suitable for subcutaneous delivery, comprising at least one compound selected from the group consisting of 4-vinylcyclohexene diepoxide, 4-vinylcyclohexene, 4-vinylcyclohexene-1,2-epoxide, and 4-vinylcyclohexene-7,8-epoxide contained in a subcutaneous delivery device.

56. The composition of Claim 55, wherein said compound is 4-vinylcyclohexene diepoxide.

57. The method of Claim 55, wherein said compound is 4-vinylcyclohexene.

58. A mammalian non-human female animal having at least a partial depletion of ovarian primordial follicles and at least one characteristic of perimenopause and/or menopause induced by administration of at least one compound selected from the group consisting of 4-vinylcyclohexene-1,2-epoxide and 4-vinylcyclohexene-7,8-epoxide.

59. A method of preparing the animal of Claim 58, comprising administering to the animal an effective amount at least one compound selected from the group consisting of 4-vinylcyclohexene-1,2-epoxide and 4-vinylcyclohexene-7,8-epoxide to cause at least a partial depletion of ovarian primordial follicles and at least on characteristic of perimenopause and/or menopause.

60. A method of screening an agent, comprising:

administering an agent to the animal of Claim 58; and

evaluating the effect of the agent on the animal.